In the Claims:

1. (Currently Amended) A system for high voltage testing of twisted insulated conductors, comprising:

a high voltage power supply to be disposed within a rotating mechanism of a twinner;

an electrode coupled to the high voltage power supply and to be disposed adjacent to a take-up reel within the rotating mechanism of the twinner, the electrode for generating sparks between the electrode and the twisted insulated conductors when a fault in the insulation of the conductors, when being wound on the take-up reel, passes by the electrode;

a transmitter to be disposed within the rotating mechanism for transmitting ~~a~~ an electromagnetic wave signal carrying information representative of fault detection characteristics of the twisted insulated conductors, the information being derived from the sparks generated between the electrode and the twisted insulated conductors; and

a receiver to be disposed outside of the rotating mechanism for receiving the electromagnetic wave signal from the transmitter.

2. (Original) A system as defined in claim 1, further comprising a fault detector to be disposed within the rotating mechanism, the fault detector communicating with at least one terminal of the high voltage power supply for detecting an increase in current across terminals of the high voltage power supply indicative of a fault in the insulation of the twisted insulated conductors being tested by the electrode and for thereupon generating the information representative of fault detection characteristics of the twisted insulated conductors.

3. (Original) A system as defined in claim 1, wherein the high voltage power supply is a DC power supply.

4. (Original) A system as defined in claim 3, wherein the high voltage power supply is adjustable for generating a voltage potential from approximately 200 volts to approximately 10 kilovolts.

5. (Original) A system as defined in claim 1, further comprising a controller coupled to the receiver for processing the information representative of fault detection characteristics of the twisted insulated conductors.

6. (Original) A system as defined in claim 5, wherein the controller is a microprocessor based programmable logic controller.

7. (Original) A system as defined in claim 5, wherein the controller includes an alarm indicator for activating at least one of an audible alarm and a visual alarm when faults have been detected or a predetermined number of faults has been exceeded.

8. (Original) A system as defined in claim 1, wherein the transmitter is a first transceiver, and the receiver is a second transceiver.

9. (Original) A system as defined in claim 8, wherein the first and second transceivers are radio frequency transceivers.

10. (Original) A system as defined in claim 8, wherein the first and second transceivers are infrared transceivers.

11. (Original) A system as defined in claim 8, wherein the first and second transceivers are optical transceivers.

12. (Original) A system as defined in claim 1, further comprising a low voltage power supply to be disposed within the rotating mechanism for energizing the high voltage power supply.

13. (Original) A system as defined in claim 1, wherein the fault detection characteristics include at least one of pin hole faults, bare wire intervals, whether the detected faults exceed a predetermined number, and whether the detected faults exceed a predetermined number per unit length of the twisted insulated conductors being tested.

14. (Currently Amended) A method of high voltage testing of twisted insulated conductors, comprising the steps of:

providing an electrode adjacent to twisted insulated conductors wound on a take-up reel within the rotating mechanism of a twinner;

providing a high voltage power supply within the rotating mechanism;

energizing the electrode by means of the high voltage power supply as the twisted insulator conductors pass by the electrode and are wound on the take-up reel such that a spark is generated between the electrode and the twisted insulated conductors when a fault in the insulation of the twisted insulated conductors passes by the electrode; and

transmitting an electromagnetic wave signal carrying information representative of fault detection characteristics of the twisted insulated conductors from a location within the rotating mechanism to a location outside of the rotating mechanism.

15. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from a transmitter disposed within the rotating mechanism to a receiver disposed outside of the rotating mechanism.

16. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from a radio frequency transmitter disposed within the rotating mechanism to a radio frequency receiver disposed outside of the rotating mechanism.

17. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from a first radio frequency transceiver disposed within the rotating mechanism to a second radio frequency transceiver disposed outside of the rotating mechanism.

18. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from an infrared transmitter disposed within the rotating mechanism to an infrared receiver disposed outside of the rotating mechanism.

19. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from a first infrared transceiver disposed within the rotating mechanism to a second infrared transceiver disposed outside of the rotating mechanism.

20. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from an optical frequency transmitter

disposed within the rotating mechanism to an optical frequency receiver disposed outside of the rotating mechanism.

21. (Original) A method as defined in claim 14, wherein the step of transmitting includes transmitting the signal from a first optical frequency transceiver disposed within the rotating mechanism to a second optical frequency transceiver disposed outside of the rotating mechanism.

22. (Original) A method as defined in claim 14, wherein the step of energizing includes adjustably generating a DC voltage potential from approximately 200 volts to approximately 10 kilovolts between the electrode and the twisted insulated conductors.

23. (Original) A method as defined in claim 14, further comprising the step of detecting an increase in current across terminals of the high voltage power supply indicative of a fault in the insulation of the twisted insulated conductors being tested by the electrode and thereupon generating the information representative of fault detection characteristics of the twisted insulated conductors.

24. (Original) A method as defined in claim 14, wherein the fault detection characteristics include at least one of pin hole faults, bare wire intervals, whether the detected faults exceed a predetermined number, and whether the detected faults exceed a predetermined number per unit length of the twisted insulated conductors being tested.

25. (Original) A method as defined in claim 14, further comprising the step of activating at least one of an audible alarm and a visual alarm when faults have been detected or a predetermined number of faults has been exceeded.